Alternative Applications of Atomic Vapor Laser Isotope Separation Technology

A Report Prepared by the
Committee on Alternative Applications of Atomic
Vapor Laser Isotope Separation Technology
Energy Engineering Board
Commission on Engineering and Technical Systems
National Research Council

NATIONAL ACADEMY PRESS
Washington, D.C. 1991

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This is a report of work supported by Contract No. DE-AC03-90SF18536 between the U.S. Department of Energy and the National Academy of Sciences-National Research Council.

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Energy Engineering Board
Commission on Engineering and Technical Systems
2101 Constitution Avenue, N.W.
Washington, D.C. 20418

Printed in the United States of America

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Acknowledgments

The committee thanks the AVLIS staff at LLNL for their extensive briefings, written documents, and frequent help in collecting the information needed for completion of this report.

The committee wishes to acknowledge with gratitude the assistance of the following organizations which provided information on various topics of interest during the course of this study: Ames Laboratory; AT&T Bell Laboratories; Babcock & Wilcox; Battelle Pacific Northwest Laboratories; Brookhaven National Laboratory; General Electric Co.; Idaho National Engineering Laboratory; KMS Fusion Inc.; Martin Marietta Energy Systems; Science Research Laboratory, Inc.; SD Laboratories, Inc.; Texas Instruments; Westinghouse-Energy Systems; Westinghouse-Hanford Company; Westinghouse Idaho Nuclear Company, Inc.; and Westinghouse-Savannah River Company.

Preface

The purpose of this study was to identify and evaluate possible alternative applications for the atomic vapor laser isotope separation (AVLIS) technology for uranium enrichment and plutonium purification developed at Lawrence Livermore National Laboratory (LLNL) and to recommend steps needed for further development of the most promising applications (see Appendix B for Statement of Task). This report provides a brief summary of the technology and subsystems that have resulted from the major development program at LLNL.

The committee considered many suggested applications, some of which have been recommended for further study or development. Recommendations also include mechanisms to enhance the effective utilization of existing facilities and the timely transfer of technologies to U.S. industry. For those unfamiliar with AVLIS technologies, it is hoped that this report will also provide a useful starting point for considering other possibilities.

C. Bradley Moore, *Chairman*
Committee on Alternative Applications of Atomic
Vapor Laser Isotope Separation Technology

Appendix C

ORGANIZATIONS INVITED TO EXAMINE THE AVLIS PROCESS

Advanced Nuclear Fuels Corporation
Bellevue, Washington

Advanced Refractories Technologies
Buffalo, New York

Advanced Technology Applications
Livermore, California

Allied Signal
Morristown, New Jersey

Allied Signal Aerospace Company
Torrance, California

Alloy Engineering Company
Berea, Ohio

Aluminum Company of America
Pittsburgh, Pennsylvania

Amgen, Inc.
Thousand Oaks, California

AMOCO Research Center
Naperville, Illinois

Argonne National Laboratory
Argonne, Illinois

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Murray Hill, New Jersey

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Naval Nuclear Fuel Division
Lynchburg, Virginia

Babcock & Wilcox Co.
New Orleans, Louisiana

B&W Fuel Company
Lynchburg, Virginia

U.S. Army Ballistic Research Laboratory
Aberdeen Proving Grounds, Maryland

Battelle Pacific Northwest Laboratories
Richland, Washington

Bechtel Corporation
San Francisco, California

Beckman Instruments, Incorporated
Fullerton, California

Bell Laboratories
Murray Hill, New Jersey

Boeing Company
Seattle, Washington

Brookhaven National Laboratory
Upton, New York

California Institute of Technology
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Niagara Falls, New York

Center for X-Ray Lithography
Stouthton, Wisconsin

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King of Prussia, Pennsylvania

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E.I. DuPont de Nemours & Co., Inc.
Wilmington, Delaware

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Rochester, New York

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Houston, Texas

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Washington, D.C.

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Honeywell Science & Research Center
Edina, Minnesota

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Hughes Aircraft Company
El Segundo, California

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Torrance, California

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Armonk, New York

IBM Corporation
Hopewell Junction, New York

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Bloomington, Indiana

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Iowa State University
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Roanoake, Virginia

G. Sargent Janes
Lincoln, Massachusetts

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Berkeley, California

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Calabasa, California

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Martin Marietta Energy Systems, Inc.
Oak Ridge, Tennessee

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McDonnell Douglas
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St. Paul, Minnesota

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Lexington, Massachusetts

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Princeton, New Jersey

Monsanto Mound Corporation
St. Louis, Missouri

Motorola
Shaumburg, Illinois

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Washington, D.C.

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China Lake, California

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Oak Ridge, Tennessee

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University of California-San Diego
San Diego, California

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Canton, Ohio

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San Jose, California

SRI International
Menlo Park, California

Stanford University
Stanford, California

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Superconductor Technologies
Santa Barbara, California

Technical Ceramics Laboratories
Alpharetta, Georgia

Teledyne-Wah Chang Albany
Huntsville, Alabama

Teledyne-Wah Chang Albany
Albany, Oregon

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Redondo Beach, California

TRW, Inc.
Cleveland, Ohio

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United Technologies Research Center
East Hartford, Connecticut

United Titanium, Incorporated
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Berkeley, California

U.S. Air Force
Edwards Air Force Base
California

U.S. Air Force
Kirtland Air Force Base
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U.S. Army LABCOM
Adelphi, Maryland

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U.S. Army-USASDC
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U.S. Department of Energy
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Idaho Falls, Idaho

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Commerical Nuclear Fuels Division
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Westinghouse Electric Corporation
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